

ABSTRACT OF THE DISCLOSURE

The apparatus and method for forming de-coupling capacitors on top of SOC VLSI chip. The introduced large amount of de-coupling capacitor is intended to solve the power delivery problem of highly integrated and powered VLSI chip, especially in the Silicon-On-Insulator (SOI) technology. This invention proposes a design scheme which could utilize virtually unused area to build efficient de-coupling capacitors without introducing additional manufacture cost. This design scheme is especially effective when the VLSI technology is scaled down further.